AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently amended) A method of monitoring chemotaxis or chemoinvasion comprising:
providing a support member having ~~a smooth~~ an upper surface;
removably sealing a top member to the ~~smooth~~ upper surface of the support member with substantially fluid tight, conformal contact to create a discrete assay chamber defining a plurality of chambers therein, each of the plurality of chambers including:
a first well region including at least one first well;
a second well region including at least one second well; and
a channel region including at least one channel connecting the first well region and the second well region with one another, wherein the at least one channel is formed as a through-hole in the top member ~~region is exposed to the environment~~;
introducing at least one soluble test substance in the at least one first well or the at least one channel;
forming a dynamic solution concentration gradient along a longitudinal axis of the plurality of chambers;
introducing cells in the at least one second well or the at least one channel; and
monitoring chemotaxis or chemoinvasion of the cells.

2. (Original) The method of claim 1, wherein the at least one channel contains a gel matrix.

3. (Original) The method of claim 1, wherein forming a dynamic solution concentration gradient comprises:
introducing a first fluid stream having a first concentration of a first substance in at least one of the plurality of chambers;

introducing a second fluid stream having a second concentration of a second substance in at least one of the plurality of chambers, wherein the first and second concentrations are different from one another.

4. (Original) The method of claim 3, wherein the first and second substances are the same.

5. (Original) The method of claim 3, wherein the first and second substances are different.

6. (Original) The method of claim 3, wherein the first fluid stream and the second fluid stream converge into a single third fluid stream that is in fluid communication with at least one of the plurality of chambers, wherein the third fluid stream comprises a concentration gradient of the first and second substances, the concentration gradient being substantially perpendicular to the direction of flow of the third fluid stream.

7. (Previously presented) The method of claim 3, wherein the first and second streams converge into a single third stream, the single third stream then diverges into separate fourth, fifth, and sixth streams, and the fourth, fifth, and sixth streams then re-converge into a single seventh stream, the single seventh stream in fluid communication with at least one of the plurality of chambers under conditions of substantially laminar flow.

8. (Original) The method of claim 1, wherein introducing cells in the at least one second well or the at least one channel comprises patterning cells on the at least one channel along the longitudinal axis of the plurality of chambers, and introducing a soluble test substance in the at least one first well or the at least one channel comprises introducing a soluble test substance in the at least one channel by laminar flow.

9. (Original) The method of claim 1, wherein introducing cells in the at least one second well or the at least one channel comprises placing a single cell type in the at least one channel.

10. (Original) The method of claim 1, wherein introducing cells in the at least one second well or the at least one channel comprises placing a mixture of cell types in the at least one channel.

11. (Original) The method of claim 1, wherein the at least one channel is a plurality of channels and introducing cells in the at least one second well or the at least one channel comprises introducing a different cell type in each of the plurality of channels.

12. (Original) The method of claim 11, wherein introducing a different cell type in each of the plurality of channels comprises introducing the different cells type at different concentrations in each of the plurality of channels.

13. (Original) The method of claim 11, wherein introducing a different cell type in each of the plurality of channels comprises introducing the different cells type in the same concentrations in each of the plurality of channels.

14. (Original) The method of claim 1, wherein the at least one channel is a plurality of channels and introducing cells in the at least one second well or the at least one channel comprises introducing a single cell type in each of the plurality of channels.

15. (Original) The method of claim 14, wherein introducing a single cell type in each of the plurality of channels comprises introducing the single cell type at different concentrations in each of the plurality of channels.

16. (Original) The method of claim 14, wherein introducing a single cell type in each of the plurality of channels comprises introducing the single cell type at the same concentrations in each of the plurality of channels.

17. (Original) The method of claim 1, wherein the at least one channel is a plurality of channels and introducing cells in the at least one second well or the at least one channel comprises introducing a mixture of cells in each of the plurality of channels.

18. (Original) The method of claim 17, wherein introducing the mixture of cells in each of the plurality of channels comprises introducing the same mixture or different mixture of cells in each of the plurality of channels.

19. (Original) The method of claim 1, wherein the at least one channel is a plurality of channels and the at least one soluble test substance is a plurality of test substances and introducing at least one soluble test substance in the at least one first well or the at least one channel comprises introducing a different one of the plurality of test substances in each of the plurality of channels.

20. (Original) The method of claim 19, wherein introducing a different one of the plurality of test substances in each of the plurality of channels comprises introducing a different one of the plurality of test substances in each of the plurality of channels at different concentrations.

21. (Original) The method of claim 19, wherein introducing a different one of the plurality of test substances in each of the plurality of channels comprises introducing a different one of the plurality of test substances in each of the plurality of channels at the same concentrations.

22. (Original) The method of claim 1, wherein the at least one channel is a plurality of channels and the at least one soluble test substance is a plurality of the same

soluble test substances and introducing at least one soluble test substance in the at least one first well or the at least one channel comprises introducing one of the plurality of the same test substances in each of the plurality of channels.

23. (Original) The method of claim 22, wherein introducing one of the plurality of the same soluble test substances in each of the plurality of channels comprises introducing one of the plurality of the same soluble test substances in each of the plurality of channels at different concentrations.

24. (Original) The method of claim 22, wherein introducing one of the plurality of the same soluble test substances in each of the plurality of channels comprises introducing one of the plurality of the same soluble test substances in each of the plurality of channels at the same concentrations.

25. (Cancelled)